WHAT IS CLAIMED IS:

1	1. A method, comprising:
2	allocating, by a protocol processor, metadata related to a packet in a host memory,
3	wherein the host memory is comprised in a host that is coupled to a network adapter;
4	copying the metadata from the host memory to an adapter memory associated with
5	the network adapter; and
6	processing, by the protocol processor, the copied metadata.
1	2. The method of claim 1, wherein the copying further comprises:
2	fetching the metadata from the host memory in anticipation of a requirement of
3	for protocol processing of the metadata by the protocol processor.
1	3. The method of claim 1, wherein the metadata is stored in a protocol
2	control block of a transport protocol, and wherein the protocol control block indicates a
3	state of a session handled by the protocol processor.
1	4. The method of claim 1, further comprising:
2	maintaining a data structure to indicate sessions capable of processing requests;
3	receiving, by the protocol processor, a request for sending a packet; and
4	copying the metadata, in response to determining based at least in part upon the
5	data structure that the request can be associated with a session that is capable of
6	processing the request.
1	5. The method of claim 1, further comprising:
2	maintaining a data structure to indicate sessions capable of processing requests;
3	receiving, by the protocol processor, a request for sending a packet;
4	determining from the data structure whether the request can be associated with a
5	session that is capable of processing the request;

- if the request cannot be associated with any session that is capable of processing
 the request then queuing the request for later processing.
- 1 6. The method of claim 1, further comprising:
- 2 maintaining a delayed acknowledgment timer, wherein the delayed
- 3 acknowledgment timer is associated with a session;
- 4 determining if the delayed acknowledgment timer is likely to expire in a period of
- 5 time;
- 6 if the delayed acknowledgment timer is likely to expire in the period of time, then
- 7 copying the metadata.
- 1 7. The method of claim 1, wherein the protocol processor is coupled to the
- 2 network adapter, wherein the network adapter is an offload engine adapter, and wherein
- 3 the host memory is larger in size than the adapter memory.
- 1 8. The method of claim 1, wherein the protocol processor is implemented in
- 2 hardware or software, and wherein the network adapter is a part of a central processing
- 3 unit of the host.
- 1 9. A network adapter, wherein the network adapter is capable of being
- 2 coupled to a host having a host memory, the network adapter comprising:
- an adapter memory associated with the network adapter;
- 4 a protocol processor, wherein the protocol processor is capable of allocating
- 5 metadata related to a packet in the host memory, copying the metadata from the host
- 6 memory to the adapter memory, and processing the copied metadata
- 1 10. The network adapter of claim 9, wherein copying the metadata further
- 2 comprises:
- fetching the metadata from the host memory in anticipation of a requirement of
- 4 for protocol processing of the metadata by the protocol processor.

1	11. The network adapter of claim 9, wherein the metadata is stored in a
2	protocol control block of a transport protocol, and wherein the protocol control block
3	indicates a state of a session handled by the protocol processor.
1	12. The network adapter of claim 9, wherein the protocol processor is further
2	capable of:
3	maintaining a data structure to indicate sessions capable of processing requests;
4	receiving a request for sending a packet;
5	copying the metadata, in response to determining based at least in part upon the
5	data structure that the request can be associated with a session that is capable of
7	processing the request.
1	13. The network adapter of claim 9, wherein the protocol processor is further
2	capable of:
3	maintaining a data structure to indicate sessions capable of processing requests;
4	receiving a request for sending a packet;
5	determining from the data structure whether the request can be associated with a
5	session that is capable of processing the request; and
7	queuing the request for later processing if the request cannot be associated with
3	any session that is capable of processing the request.
l	14. The network adapter of claim 9, wherein the protocol processor is further
2	capable of:
3	maintaining a delayed acknowledgment timer, wherein the delayed
1	acknowledgment timer is associated with a session;
5	determining if the delayed acknowledgment timer is likely to expire in a period of
5	time; and
7	if the delayed acknowledgment timer is likely to expire in the period of time, then
3	copying the metadata.

- 1 15. The network adapter of claim 9, wherein the protocol processor is coupled 2 to the network adapter, wherein the network adapter is an offload engine adapter, and
- 3 wherein the host memory is larger in size than the adapter memory.
- 1 16. The network adapter of claim 9, wherein the protocol processor is
- 2 implemented in hardware or software, and wherein the network adapter is a part of a
- 3 central processing unit of the host.
- 1 17. A system in communication with data storage, comprising:
- 2 a host;
- a data storage controller to manage Input/Output (I/O) access to the data storage,
- 4 wherein the data storage controller is coupled to the host;
- 5 a network adapter coupled to the host;
- a host memory coupled to the host;
- 7 an adapter memory associated with to the network adapter;
- 8 a protocol processor, wherein the protocol processor is capable of allocating
- 9 metadata related to a packet in the host memory, copying the metadata from the host
- 10 memory to the adapter memory, and processing the copied metadata.
- 1 18. The system of claim 17, wherein copying the metadata from the host
- 2 further comprises:
- fetching the metadata from the host memory in anticipation of a requirement of
- 4 for protocol processing of the metadata by the protocol processor.
- 1 19. The system of claim 17, further comprising:
- a data structure to indicate sessions capable of processing requests, wherein the
- 3 protocol processor is capable of receiving a request for sending a packet, and wherein the
- 4 protocol processor is capable of copying the metadata, in response to determining based

- 5 at least in part upon the data structure that the request can be associated with a session
- 6 that is capable of processing the request.
- 1 20. An article of manufacture, comprising a storage medium having stored
- 2 therein instructions that when executed by a machine results in the following:
- allocating, by a protocol processor, metadata related to a packet in a host memory,
- 4 wherein the host memory is comprised in a host that is coupled to a network adapter,
- 5 copying the metadata from the host memory to an adapter memory that is
- 6 associated with the network adapter; and
- 7 processing, by the protocol processor, the copied metadata.
- 1 21. The article of manufacture of claim 20, wherein the copying further
- 2 comprises:
- fetching the metadata from the host memory in anticipation of a requirement of
- 4 for protocol processing of the metadata by the protocol processor.
- 1 22. The article of manufacture of claim 20, wherein the metadata is stored in a
- 2 protocol control block of a transport protocol, and wherein the protocol control block
- 3 indicates a state of a session handled by the protocol processor.
- 1 23. The article of manufacture of claim 20, wherein the instructions when
- 2 executed further results in the following:
- maintaining a data structure to indicate sessions capable of processing requests;
- 4 receiving, by the protocol processor, a request for sending a packet;
- 5 copying the metadata, in response to determining based at least in part upon the
- 6 data structure that the request can be associated with a session that is capable of
- 7 processing the request.
- 1 24. The article of manufacture of claim 20, wherein the instructions when
- 2 executed further result in the following:

- maintaining a data structure to indicate sessions capable of processing requests;
- 4 receiving, by the protocol processor, a request for sending a packet;
- determining from the data structure whether the request can be associated with a
- 6 session that is capable of processing the request;
- 7 if the request cannot be associated with any session that is capable of processing 8 the request then queuing the request for later processing.
- 1 25. The article of manufacture of claim 20, wherein the instructions when 2 executed further result in the following:
- maintaining a delayed acknowledgment timer, wherein the delayed
- 4 acknowledgment timer is associated with a session;
- 5 determining if the delayed acknowledgment timer is likely to expire in a period of
- 6 time;
- if the delayed acknowledgment timer is likely to expire in the period of time, then copying the metadata.
- 1 26. The article of manufacture of claim 20, wherein the protocol processor is 2 coupled to the network adapter, wherein the network adapter is an offload engine adapter,
- 3 and wherein the host memory is larger in size than the adapter memory.
- 1 27. The article of manufacture of claim 20, wherein the protocol processor is
- 2 implemented in hardware or software, and wherein the network adapter is a part of a
- 3 central processing unit of the host.